

# **CHAPTER 1 - NCLB REQUIREMENTS**

## **Specific Aspects of South Dakota's Accountability Plan**

### *Back loading AMOs*

In SD we have established our AMOs in such a way that they are back loaded. That is to say that the AMO increases in the final four years (2011-2014) are approximately twice the increase of the first eight years (2003-2010). This has the effect of making it easier for schools to make AYP for the next several years than it would have been if SD had chosen to increase AMOs at an equal rate each year. Since the NCLB Act itself is set to expire in 2008, SD has effectively delayed the impact of NCLB's 100% proficiency goal until after the Act would have to be reauthorized. As mentioned previously, SD is not the only state to have done this and we are not saying there is anything wrong with what SD has done. Rather we just point out that there are many things to occur legislatively and politically before SD will have to make the largest, and arguably the hardest to achieve, gains in student proficiency.

### *Use of the Confidence Interval and Small Test Group Sizes*

Many states have established a minimum subgroup size for assessing and reporting results. In many states this was set to 30 or 40. In SD with our numerous small schools, the use of such a subgroup size would have resulted in a significant number of schools being not assessable using test results. In these cases, an alternate method would have to be used to determine AYP. In SD this method is called the "small school audit" which involves a review of additional academic data.

To reduce the number of schools subject to the small school audit and to reduce the likelihood of identifying a school as not meeting the AMO when in fact it did, SD established its accountability plan using a minimum subgroup size of 10 along with a confidence interval for reporting and accountability purposes.

The use of a confidence interval is a statistical concept and a detailed discussion of its usage and merits is beyond the scope of this report. In brief, SD starts from the hypothesis that all schools met the AMO. It is then up to the test results to prove otherwise.

The confidence interval is applied to the actual percentage of proficient/advanced students in a subgroup. If the AMO is within the pass rate including the confidence interval, the subgroup met the AMO even though the actual pass rate for the subgroup may have been below the AMO. In SD, the confidence interval is based on 99%.

For example, for 2004 the AMO for elementary math was 45%. Using the confidence interval allows a subgroup of 10 to meet the AMO with only 1 passer (10% pass rate). A subgroup of 20 would require 4 passers (20% pass rate) to meet the AMO and a subgroup of 100 would require 33 passers (33% pass rate) to meet the AMO. As can be seen, as the subgroup size increases, the percentage of students that must pass from that subgroup increases if the subgroup is to meet the AMO. The drawback of this use of the confidence interval is that for the smallest of the subgroups, the risk of accepting a subgroup as meeting the AMO when in fact it did not is actually quite high. It is also interesting to note that while a subgroup of 10 with no passers would fail meeting the AMO, a subgroup of 9 with no passers would not be considered as failing the AMO because the subgroup size is less than 10 and therefore would not be held accountable.

As previously stated, SD has established a minimum subgroup size of 10 for reporting in order to maintain the confidentiality of the test takers and to reduce the number of schools that would require alternate assessment by receiving a small school audit. While the use of the confidence interval and the minimum subgroup size make sense from statistical and practical standpoints, they do produce some interesting outcomes when you look at actual testing results as discussed in the following paragraphs.

A factor affecting the subgroup size is the number of grades assessed in a school. Elementary schools tend to have the most grades tested with grades 3-5 and sometimes grade 6 being tested; middle schools follow closely with grades 6-8 or grades 7-8 being most common. High schools however are assessed only on the 11<sup>th</sup> grade. Because of the number of small high schools in SD, the minimum subgroup size of 10 precludes many subgroups from being assessed even though a number of those subgroups contain students. The following Table 2.4 provides a frequency distribution of the number of special education students tested for math in 2004 by school type.

<b>Table 2.4: 2004 Math Assessment Special Education Subgroup</b>			
<b>Number of Students Tested</b>	<b>Number of Schools</b>		
	<b>High Schools</b>	<b>Middle Schools</b>	<b>Elementary Schools</b>
0	34	14	51
1-2	68	33	49
3-5	41	45	50
6-9	12	36	39
10-20	10	23	94
21-50	5	21	55
51-100	0	17	4
101-over	0	0	0
<b>Totals</b>	<b>170</b>	<b>189</b>	<b>342</b>
Source: Legislative Audit compilation of SDDOE supplied data.			

As the table 2.4 shows, only 15 high schools had a sufficient number of special education students tested to allow that subgroup to be evaluated based on test results. When one considers that for the 2004 math test, 10 of 17 (59%) high schools, 34 of 46 (74%) middle schools and 26 of 56 (46%) elementary schools failed to meet the AMO solely because of the special education subgroup, it comes as no surprise that the high schools in need of improvement list is dominated by large high schools. It is not that the other schools do not have students in the subgroup; it is just that they do not have a sufficient number of students for their test results to be reported. In fact, across all school types, 602 of 701 (86%) schools had at least one student in the special education subgroup, but only 229 of these 602 (38%) schools had 10 or more in the subgroup. In total, 7,004 special education students were tested for math in 2004 and 5,618 were in schools where the subgroup was 10 or larger. This leaves 1,386 special education students in 373 schools that were in subgroups too small to be held accountable. (See Appendix C for table showing AYP determinations by school type, subject

and subgroup.) According to the SDDOE, only 18 schools will be receiving a small school audit in the coming year.

Going forward, increases in the AMO and the use of the confidence interval will affect the number of students that must pass at a greater rate than the increase in the AMO. For example, in 2011 when the AMO for elementary math has risen from 45% to 73% (a 62% increase), a subgroup of 10 that in 2004 only needed 1 passer to meet AMO will need 4 passers (40%) or a four fold increase to meet the AMO. Comparatively, a subgroup of 100 which required 33 passers in 2004 will need 63 (63%) passers or approximately a two fold increase to meet the AMO. (See table on page 7 for the annual incremental increases in AMO.)

Because of the back loading of the AMOs, the subgroup minimum size of 10 and the confidence interval, the risk of small schools and particularly small high schools, being added to the in need of improvement list is much lower than for the larger middle and high schools. This will change somewhat as the AMOs begin to approach the ultimate goal of 100%. However, as stated earlier, the NCLB Act itself expires in 2008 and much can happen between now and then.

It is important to note here that the SDDOE by establishing the minimum subgroup size of 10 and using the confidence interval has minimized the risk that a school would be identified as in need of improvement when in fact it is not. By establishing the back loaded AMOs, the SDDOE has significantly delayed the potential punitive effects of NCLB for a majority of SD's schools. Considering the small size of a majority of SD's schools and the subgroups within those schools and the fact that NCLB's assessment requirements rely almost entirely on the results of a single test each year from these small groups, these decisions by the SDDOE seem to have been prudent.